

No. 8.— *Mammals from Darien.*

BY GLOVER M. ALLEN AND THOMAS BARBOUR.

IN a previous paper (Bangs and Barbour, 1922) are listed the birds brought back from eastern Panama by the junior author and W. S. Brooks during a brief sojourn (March to May, 1922) in that country. This article gives an account of the expedition and a sketch of the conditions obtaining in the country traversed. In addition to other vertebrates (see Barbour, 1923), nearly one hundred mammals were collected, two of which represent hitherto undescribed forms. In as much as the publication of Major Goldman's (1920) excellent treatise on the mammals of Panama has laid such a satisfactory basis for further investigation, it seems worth while to publish a list of the species found by the expedition together with brief field notes. Of especial interest is the meeting of North American and South American types. Thus the discovery of a small *Urocyon* in the savannas of Panama adds a genus hitherto unreported from the isthmus south of Costa Rica, although its presence was to have been surmised from the fact of its recent and unexpected discovery in Venezuela. On the other hand the capture of a new species of *Oecomys* in the forest of eastern Panama, not only adds another genus to the known Panamanian fauna, but serves to link it with that of South America. Two genera of bats are also now definitely recorded for Panama, though both have previously been taken farther northward in Central America, namely, *Noctilio* and *Thyroptera*, the latter represented by a species very little known. Press of time prevented the preparation of large series of many species which would have been easily obtainable.

1. *CHIRONECTES PANAMENSIS* Goldman. Panama Water Opossum.

The Zorro de Agua was very rare in the Sambú valley. It was met with but once, in the course of night hunting with a lamp. Unlike most Neotropical marsupials it was very active and although wounded, quickly made its escape among the great rock piles at the foot of a cliff beside the Rio Jesu^oito. All agreed that it was a rare species and but seldom killed by the Chocoano Indians.

2. DIDELPHIS MARSUPIALIS ETENSIS Allen. Eten Opossum.

A single specimen was taken at Ancon.

There were a few Zorros on Ancon Hill and this one was trapped by using ripe banana for bait. Another was trapped on the lower Rio Jesusito coming to feed on bananas that had ripened on a tree which leaned so as to be almost prone. There was so much in camp awaiting preparation that this animal, a female with nine young, was liberated.

3. METACHIRUS OPOSSUM FUSCOGRISEUS Allen.

One from Gatun, in the Canal Zone.

This female had three half-grown young clinging to her fur. She made no attempt to "play possum" but on the contrary was most snappish and aggressive, a trait noticed also by Goldman.

4. PHILANDER LANIGER DERBIANUS Waterhouse.
Derby's Woolly Opossum.

A single male from Old Panama seems to be this, rather than the grayer race, *pallidus*, of western Panama. It is uniformly bright cinnamon above with an ill-defined gray shoulder-stripe.

A hunter who worked for us killed this Woolly Opossum one night in the scrubby woodland of the savanna near Old Panama. He declared that though he hunted regularly with a jack-light he but seldom killed this species.

5. BRADYPUS IGNAVUS Goldman. Panama Three-toed Sloth.

An adult and a young one from Mt. Sapo.

In the high forest sloths were almost impossible to find. These two were found in a rather low palm growing in an open glade, hence they were easily caught by cutting down the tree. The camp followers declared the meat unfit for food but seeing it cooked and enjoyed, they, following the example, tried it and finally picked every bone clean.

An Indian child was seen using, as a toy, the crudely stuffed skin of a Cyclopes. It made a rude sort of doll.

6. *PECARI ANGULATUS BANGSI* Goldman. Bangs's Collared Peccary.

A skin and skull from Rio Jesusito, and a skull from Salamanca.

The Indians called the little peccary, "Bidóbe" and the white-lipped pig, "Bidó"; the Spanish names "Zajino" and "Puerco de Monte," respectively, are now widely used by foreigners as well as by natives. There are so many Indians hunting in the Sambú Valley that peccaries are far from common though we often heard them and saw their tracks. In regions where they are little disturbed they have their regular feeding stations, called comederos, under fruit trees but where they are much hunted they quickly abandon this habit.

7. *TAYASSU PECARI SPIRADENS* Goldman.
Costa Rican White-lipped Peccary.

Goldman was doubtless correct in assuming that the eight skulls brought back by Dr. G. A. Maack, and now in the M. C. Z., labeled Isthmus of Panama, really came from Colombian territory. Except for a few specimens taken at Bas Obispo, it is probable that all his collections were from the vicinity of the town of Turbo, near the mouth of the Atrato River and on the Uraba Gulf.

8. *ODOCOILEUS CHIRIQUENSIS* Allen. Chiriqui White-tailed Deer.

Several skulls from the open country in and near the Canal Zone. The stunted heavy antlers are in strong contrast to those of more northern deer.

Thanks to Dr. Olson of the Ancon Dispensary and the members of the Tabernilla Hunting Club we have received and are still receiving, from time to time, skulls which will finely represent this beautiful form.

9. *MAZAMA SARTORII REPERTICIA* Goldman. Canal Zone Forest Deer.

A male and a female from the Jesusito.

Though both are adult, the skull of the female is larger than that of the male, which has a decidedly shorter rostrum. It would be interesting to know when the antlers are shed. The male of this pair, killed in April, has antlers about 85 mm. long, strong, and sharp-pointed; and one taken by W. W. Brown, Jr., at Divala on June 29,

still retained the antlers. Indeed the Indians generally believe that they are not shed at all.

Living in the great forest they know of this species of deer only and call it "Begí." It is rather common.

10. *Oecomys trabeatus*, sp. nov.

Panama White-bellied Tree Mouse.

TYPE.—Skin and skull, M. C. Z. 19,837, male, from Rio Jesusito, eastern Panama, 10 April, 1922. Thomas Barbour and W. S. Brooks.

DESCRIPTION.—A small species related to *bicolor* of Ecuador but slightly larger and brighter, with longer pelage.

Middorsal area from crown to root of tail bright ochraceous rufous, finely lined with blackish hairs, brighter and clearer on the rump, paling to clear ochraceous at the sides of the body; ankles and base of tail dusky ochraceous all round. Bases of dorsal hairs everywhere plumbeous. Upper lips, and entire ventral surface of body, including inner sides of fore limbs to the wrists, and inner sides of hind legs almost to ankles, clear white, sharply defined at the sides, hairs everywhere white to their bases. Backs of hands and feet washed with pale ochraceous, the toes with minute whitish hairs. Ears dark brown, with minute scattered brown hairs on the exterior and ochraceous hairs on the inner surface. Tail dusky brown, monochrome, evenly covered with short appressed dark brown hairs, about the length of two caudal scales, but somewhat longer at the extreme tip. Vibrissae blackish, about 40 mm. long. Supraorbital vibrissa 27 mm.

SKULL.—The skull is typical of the genus, with short rostrum, the brain-case with somewhat bulging outlines, antorbital plate not projecting forward, incisive foramina barely reaching the plane of the cheek-teeth, and the palate extending well behind the level of the molars. The premaxillaries distinctly exceed the nasals in backward extension, whereas in *O. bicolor* the opposite condition obtains. The supraorbital beading forms a slightly overhanging ledge and can be faintly traced as an indistinct ridge across the parietals to the outer corners of the interparietal.

MEASUREMENTS.—The collector's measurements are:—total length 230 mm., tail 120, hind foot 22, ear 15. The skull measures: greatest (occipitonasal) length 26 mm., basal length 24, palatal length 13.5, diastema 7, upper cheek-teeth 4, zygomatic width 15, mastoid width 12, width outside last molars 5.

The discovery of this handsome little mouse is one of the important results of the expedition, and definitely extends the known range of this genus northward into Middle America. It was found in the forest in the course of hunting monkeys. It fell to the ground from a tangle of vines torn down when a small tree was felled to get a monkey which had lodged among the branches. Of the described species of this genus, it apparently comes closest to *O. bicolor* of Ecuador of which we have three specimens for comparison. It is, however, somewhat larger, longer-tailed, and has a much longer, fuller pelage, the hairs of the back measuring about 10 mm. against 5 or 6 in *O. bicolor*. The latter has, therefore, a much closer pelage and besides wholly lacks the bright rufous tone of *trabecatus*. The Latin name (signifying "of regal dress") is suggested by the coloring, pure white below like ermine, and of bright gold and rufous above. Its somewhat rounded braincase, shortened rostrum, broad hind feet and slightly tufted tail go with habits completely arboreal. The vibrissae are very long and more abundant than in *O. bicolor*. In their general outward appearance the mice of this genus and *Rhipidomys* parallel in an extraordinary way, the African bush mice (*Thamnomys*), to which of course they are in no way closely related.

11. *ORYZOMYS TALAMANCAE* Allen. Talamanca Rice Rat.

A single skin and skull from Rio Esnápe. This mouse was observed to run down a large tree and take refuge in a hole at the base of the trunk, whence it was finally, and with much difficulty, extracted. Goldman states that it ranges throughout Panama. Several specimens of this rat were trapped but, as with so many other trapped rodents, they were wholly destroyed by ants before they could be taken from the traps.

12. *MELANOMYS CALIGINOSUS IDONEUS* (Goldman). Panama Dusky Rice Rat.

Two specimens, Rio Jesús and Rio Jesusito.

This is apparently a common species at middle levels. To this species the same note applies as to losses by ants. It was abundant about an old clearing on the lower Rio Jesusito.

13. SIGMODON HISPIDUS CHIRIQUENSIS Allen. Boqueron Cotton Rat.

Two in alcohol from the Canal Zone.

These specimens were kindly given to the Museum by Dr. Clark and Mr. James Zetek of the Ancon Board of Health Laboratory to whom we are beholden for very many favours.

14. HETEROMYS AUSTRALIS CONSCIUS Goldman.
Cana Pocket Mouse.

A skin and skull from Rio Esnápe. The pelage is nearly uniform blackish above, very hispid, with but few finer hairs.

This mouse was found only once. Several lived in a series of holes in the stream bank near the Esnápe camp. The one preserved was shot at dusk at the stream shore but others occasionally got into the large steel traps at this camp, leaving only a foot behind. As these mice were several times seen in the daylight hours they are probably more or less diurnal.

15. PROECHIMYS SEMISPINOSUS PANAMENSIS Thomas.
Panama Spiny Rat.

Several were captured on the Rio Jesusito and Rio Esnápe. Goldman, after examining over 100 specimens, concludes that "in general characters *P. s. panamensis* is about midway between *P. s. centralis* and *P. s. semispinosus*" of Ecuador. To the former he refers the M. C. Z. series from western Panama, topotypes of Thomas's *chiriquinus*, considering them inseparable. From these latter, however, the five skins from Rio Jesusito and Rio Esnápe differ in being less richly colored, and especially in having the hind feet whitish with a dusky metatarsal area instead of uniformly dusky as in the Bogaba series. The tails too are somewhat shorter. No doubt the eastern Panama spiny rats approach typical *semispinosus*.

These "Macangueyes," as they are called by the Panamanians, were common in the lowland and foothill "taguales" or groves of ivory-nut palms. We tried them once when hard pressed for food and then ate them regularly. The flesh was excellent.

16. *DASYPROCTA PUNCTATA DARIENSIS* Goldman. Darien Agouti.

Four skins and skulls from Rio Jesusito and Rio Esnápe.

Called "Ñequi" by the Spanish speakers, and "Curiguá" by the Indians. We found the agoutis common throughout the forest. They were much hunted and very shy. They came sometimes to drink at the streams or sneaked out into the clearings about the camps, but generally were more often heard than seen. The skins shrink surprisingly and the old males, when fresh killed, are enormous, great paunchy creatures surprisingly heavy and excellent food.

17. *CUNICULUS PACA VIRGATUS* (Bangs). Panama Paca.

The "Conejo Pintado" or "Benóña" of the Chocoanos were rare where the expedition happened to be, though tracks were often seen and several of the animals were started in the course of night hunting. No special effort was made to secure specimens though it would have been possible to obtain a few. The Indians have hunted them so persistently that they are very shy.

18. *HYDROCHOERUS ISTHMIUS* Goldman. Isthmian Capybara.

It is interesting to establish the fact that, contrary to rumor, the "Poncho" does not occur in the Sambú drainage area, but is apparently confined entirely to the Tuyra Basin and even there has a rather limited range along the lower river.

19. *SCIURUS GERRARDI CHOCO* Goldman. Darien Squirrel.

This was a common species in the forest. Several specimens from Rio Jesusito, Rio Esnápe, and Mt. Sapo are in the collection.

These squirrels were usually seen climbing about among the vines and creepers in very high forest trees. Once, while watching for Cotingas under a feeding tree, one was seen to come to the ground and explore about for some time. They were surprisingly noisy, until they were aware of the hunter's presence.

20. *MICROSCIURUS ALFARI VENUSTULUS* Goldman.
Canal Zone Pygmy Squirrel.

Three skins and skulls from Mt. Sapo represent this form.

A rare little squirrel seen only high on the slopes of Mt. Sapo where there were groves of ivory-nut palms at about 3,000 feet elevation.

21. *SYLVILAGUS GABBI CONSOBRINUS* Anthony. Savanna Rabbit.

This pallid race is confined to the savanna region of southern Panama. Three were secured at the type-locality near the city of Old Panama.

Common and called "Mulita" by the hunters. With a little more time a large series could have been secured with a jack-light.

22. *UROCYON CINEREOARGENTEUS FURVUS*, subsp. nov.
Panama Gray Fox.

TYPE.—Skin and skull, M. C. Z. 19,774, ? female, from the Panama Canal Zone, three miles west of Balboa.

DESCRIPTION.—Similar to *U. c. guatemalae* but paler and shorter-haired. Entire dorsal surface from between the eyes to the root of the tail, the flanks and thighs, a grizzled gray, very little darker on the nape and middorsal area. Superciliary spot whitish. Bases of the ears and sides of throat ochraceous; tips of ears, the fore arms and fore feet above, paler ochraceous slightly grizzled with grayish and dark-tipped hairs; hind feet grizzled grayish. Muzzle at base of vibrissae, lips at corner of mouth and an area between the rami of the jaws dusky brown. Under surface of fore and hind limbs and the sides of the belly between axilla and groin, pale buffy extending as a distinct narrow line along the outer edge of femur. Chin, upper lips, throat, a median line on lower side of neck, chest between fore limbs, and the inguinal region, whitish to the roots of the hairs. Tail brownish black dorsally, its sides grizzled white and dusky, and the ventral side pale buffy.

Through the kindness of Capt. H. E. Anthony, of the American Museum of Natural History, we have for comparison, in addition to Costa Rica specimens in the M. C. Z., a series of five gray foxes from Nicaragua considered to represent *U. c. guatemalae*. These, as might be expected, differ in their longer and darker-colored pelage, though captured at the same season. Dorsally, the hairs of the under fur are dusky at the base, tipped with dull buff, whereas in the Panama race, the under fur is clear pale buff to the roots. In *guatemalae* the over-hairs are nearly black with a subterminal white ring and a fine black tip but in the more southern race the black is replaced by a dusky brown, and is much more evenly distributed so that the middorsal area is only slightly darkened. The length of the longest hairs

on the shoulders is some 25 mm. instead of 33 mm. in a comparable pelage of *guatemalae*. The general effect is a much paler, more buffy and less black, mixture.

SKULL.—The skull, though fully adult, is very much smaller than that of any available from Costa Rica or Nicaragua, with a shorter and narrower rostrum, but the size of the two upper molars in surface view equals, or exceeds, that of the more northern foxes, in which, among nearly all of the nine specimens available, the second upper molar is actually smaller. In *guatemalae* the audital bullae, though somewhat variable are in no case so inflated or so closely approximated as in the new race. The Panamanian fox has the bullae obviously more swollen on the median side, so that they overhang their bases, instead of sloping outward, as viewed from behind and are closely approximated. In this respect it resembles the Yucatan races, which, however, have smaller teeth.

MEASUREMENTS.—The skull measures: greatest length 102 mm., basal length 99, palatal length 47, zygomatic breadth 54.5, least interorbital breadth 19, breadth across postorbital processes 31, greatest breadth of brain-case 40, mastoid breadth 39, length of audital bulla 19, distance between audital bullae 6, upper tooth-row (exclusive of incisors) 44.5, width across outer corners of m^1 , 30, mandible 78, lower toothrow (exclusive of incisors) 50, alveolar length of upper carnassial 10, combined length of upper molars 14.

REMARKS.—With the exception of a skin (without skull) from Tocuyo, Venezuela, described by J. A. Allen (1911) as *U. c. venezuelae*, this is the most southern record of *Urocyon*, the previous known limit of which was Pozo Azul, Costa Rica. The Venezuelan race is said to be even darker than *guatemalae*, with larger ears. The Panama Gray Fox seems to represent a pallid race probably confined to the semiarid savanna country. Its shorter pelage and less intense coloring are what would be expected in contrast to the longer-haired and darker-colored condition of the form inhabiting the more humid region to the north. Miller (1899) has already pointed out the similarity of the small Central American gray foxes to the Californian *Urocyon littoralis* to which they may eventually prove more closely related than to the larger *cinereoargenteus* of northern Mexico and the United States, of which they are at present regarded as subspecies.

This fox was kindly given us by Dr. Clark, Pathologist of the Board of Health Laboratory at Ancon to whom it was brought for autopsy after it was shot by an employee of the Canal Zone Sanitary Service. It had been preserved in formaldehyde a short while before coming into our possession.

23. ICTICYON PANAMENSIS Goldman. Panama Bush Dog.

The Indians in the Sambú Valley knew of the Bush Dog but no one of the expedition had the good luck to secure one.

24. PROCYON CANCRIVORUS PANAMENSIS (Goldman).
Panama Crab-eating Raccoon.

A specimen from Old Panama.

Both this Crab-eating Raccoon and the ordinary *P. lotor pumilus* Miller were common in the large mangrove swamps about Old Panama and a good many find their way alive into the Panama market. Both species without distinction are called "Mapachines," yet the hunters well know that two forms are confused. They are often hunted at night as they come out on the tidal flats to feed.

25. POTOS FLAVUS ISTHMICUS Goldman. Isthmian Kinkajou.

One from the Rio Esnápe.

Goldman correctly gives "Cusimbí" as the native name for the Isthmian Kinkajou and then "Olingo" for the Chiriquian race, and for the races of Bassaricyon as well. It was, however, impossible to find anyone in Panama who had ever heard of the latter name. Quoting Anthony (1916) the names appear as "Cusumbi" and "Manteja." The second name, which should appear "Marteja" is really in use only for the night monkey (*Aotus*). It is derived from the Peninsular Spanish name of "Marta" for the marten or sable. The former name is also incorrectly rendered.

Kinkajous abounded in the high woods and were often heard at night. Their eyes were also frequently seen while night hunting. Once while camped for the night on the lower Sambú, a little band of them came climbing down some vines, which hung in the river, to drink and were clearly visible as they crossed the face of the moon.

26. NASUA NARICA PANAMENSIS Allen. Panama Coati.

Seen several times, usually single individuals and in the mangrove swamps along the lower Sambú. The name "Pisote" given by Goldman is a Costa Rican term and was probably supplied by Major Goldman's Costa Rican assistant, Señor Lizano. The Panamanian name is "Gato solo."

27. GRISON CANASTER (Nelson).

A beautiful tame pet of this species which had been for some time in captivity, was seen in Panama. It came from the upper Chagres Valley, where the species was said not to be uncommon.

28. LUTRA REPANDA Goldman. Panama Otter.

A skull from Rio Chico, given by Dr. Clark of Ancon.

Otters were well known to the Indians who often promised specimens. Plenty of otter-sign was seen along the rapid highland streams but never a shot was offered. During absence in the interior two otters were brought to Garachiné for the expedition, by a negro hunter. The local Chinese storekeeper sent them to Panama for sale, not knowing that they were really wanted by naturalists enough to bring a price. Thus they were unfortunately lost.

29. FELIS ONCA CENTRALIS Mearns. Central American Jaguar.

A skull of a female from the Rio Peluca was purchased in Panama.

Jaguars were abundant; their tracks were often seen and they were several times heard as well. Called "Tigre" in Spanish, the Indians call this beast "Ímama" and the somewhat less common Puma or "Leon," "Ímama-puru."

30. FELIS PARDALIS MEARNESI Allen. Mearns's Ocelot.

A skull from the Rio Gatuncito, purchased in Panama.

In Costa Rica the name "Tigrillo" applies to the Gray Fox, in Panama to the Ocelot, for which the Chocoano Indian name is the unwritable and almost unpronounceable "Ghlüghlü," very guttural and liquid.

Where the Rio Congo Timber Co. is clearing land on the west side of San Miguel Gulf, ocelots and other cats are said to be very numerous.

31. RHYNCHISCUS NASO (Wied). Long-nosed Bat.

Several in alcohol from the upper Rio Jesusito. The adults seem referable to the typical form, with slender anterior premolar. With them are three young, the largest hardly bigger than a bumble-bee.

These were taken about April 20 which indicates therefore that the young are born rather early in the year. The stomachs of the adults were distended with a mass of insect remains, minutely cut up.

32. *SACCOPTERYX BILINEATA* (Temminck).
Greater White-lined Bat.

Three from the ruins of Old Panama; four from Mt. Sapo.

The bats of this species from Old Panama were shot out of small and well-lighted recesses in the ruins of the Jesuit church. The four others came from an enormous tree, so hollow and so broken as to be quite light inside.

(Of *Centronycteris centralis* Thomas, hitherto known only from Bogaba, Chiriquí, the type-locality, the Museum possesses a skin and skull from Costa Rica, obtained by C. F. Underwood some years ago. The rarity of the species prompts its record here).

33. *NOCTILIO LEPORINUS* (Linné). Bull-dog Bat.

This species has not hitherto been recorded from Panama. Two specimens in alcohol were presented by Dr. Clark of the Ancon Laboratory. They were taken in dwelling houses in Panama City into which they had chanced to fly; one in August 1913, the other at an unrecorded date but much more recently. The type-locality is Surinam. So far as can be determined by material at hand, they are typical. The fore arms measure 84 and 86.5 mm. respectively. Both are males.

34. *MICRONYCTERIS MICROTIS* Miller. Nicaraguan Small-eared Bat.

A single specimen from Rio Jesusito.

A large hollow tree not far from the upper Jesusito camp when smoked out, yielded several desirable bats, among them this rare form,

35. *TONATIA AMBLYOTIS* (Wagner). Round-eared Bat.

This South American species has been once recorded from Panama, namely at Bogaba, Chiriquí. A second record is therefore afforded by a specimen from the Rio Esnápe.

This bat was shot at dusk one evening as it flew over the stream in front of camp.

36. *TRACHOPS CIRRHOSUS* (Spix). Fringe-lipped Bat.

Three from the Rio Jesusito seem to make the second record of the species for Panama. Of these, one is a male, and the two others are adult females, each containing a large embryo.

These were got from the same large hollow tree which, when fired, yielded the *Micronycteris*.

37. *GLOSSOPHAGA SORICINA LEACHII* (Gray).

Leach's Long-tongued Bat.

This is a common species in Panama, whence a large series from Old Panama was obtained by the junior author in 1909. One also was captured near Panama City on this trip.

38. *HEMIDERMA PERSPICILLATUM AZTECUM* (Saussure).

Short-tailed Bat.

Two from Old Panama. An abundant species.

The ruined vault or cellar in which Goldman and Osgood had the good luck to find *Macrophyllum* in 1910, is now unsuited for a bat roost as the site has been cleared, the cellar opened, and the roof removed presumably by treasure seekers. A few *Hemidermas* and *Glossophagas* were all there were to be found in the open area in 1922.

39. *ARTIBEUS JAMAICENSIS* Leach. Jamaican Bat.

Two from Rio Jesusito; one from Panama City. Common both in the forest and in open country. This species retires in day time into ruins, crevices or rocky cliffs, hollow trees, and dense foliage, especially of *nispera* or *sapote* trees.

40. *ARTIBEUS WATSONI* Thomas.

One from Ancon, Canal Zone, Panama.

This rather uncommon bat flew into a house one evening and was captured.

41. *THYROPTERA ALBIVENTER* (Tomes). White-bellied Disk Bat.

A single specimen from Rio Jesusito, eastern Panama. Not only is this genus an addition to the known Panamanian fauna, but the species itself is one so rare that its status has not hitherto been settled

beyond question. The only Thyroptera previously recorded from Central America is *T. discifera*, which is of a nearly uniform brown color and also differs structurally from *T. tricolor*, the only other species currently recognized. In 1856, however, Tomes described *Hyonycteris* (= *Thyroptera*) *albiventer* from the Rio Napo, Ecuador, distinguishing it from *tricolor* by reason of its coloring. In the latter, the throat, upper chest, and sides are reddish brown, leaving a central area of the under parts whitish. In *albiventer*, however, the white area is much more extensive, and includes nearly all the under surface of the body except a narrow strip at the sides and the space between the rami of the mandibles, which is reddish brown, passing into that of the sides of the head and back. The specimen from Rio Jesusito agrees perfectly with Tomes's description. There is also in the Museum a mounted specimen from "Ecuador" which was referred to this species some years ago (G. M. Allen, 1908, p. 42). A careful comparison of the Panamanian specimen with others from Trinidad taken to represent *tricolor*, shows that *albiventer* differs not only in color-pattern but in several structural characters. Thus, the fifth finger is decidedly longer, although the fore arm and third and fourth fingers are practically the same in both. The tail is absolutely longer, but less of its tip is free, so that when the interfemoral membrane is stretched laterally, its outline is nearly a rectangle in *tricolor*; whereas in *albiventer* it forms a square. In *tricolor*, the tail measures (from anus) 26 mm. of which the terminal 9 mm. (34%) are free; whereas in *albiventer* the tail is 30 mm. long of which only the terminal 4.5 mm. (15%) are free. Both upper incisors have a distinct secondary cusp, that of the inner, however, barely noticeable. The peculiar syndactylism of the third and fourth hind toes, noted by Miller (1896) for *T. discifera*, obtains also in *T. albiventer* and *T. tricolor* and is characteristic of the genus, as far as known. Leaving out of consideration *T. bicolor* Cantraine, described from Surinam in 1845, and probably a synonym of *tricolor*, the existence of three distinct species of Thyroptera may now be regarded as proved.

This little bat was caught with the specimens of *Rhynchiscus* in the great, dry, curled-up Heliconia leaves. Another was captured but escaped.

42. AOTUS ZONALIS Goldman. Canal Zone Night Monkey.

Five from the upper Rio Jesusito.

The "Martejas" were common and excellent eating. They were

quite abundant and were heard every night. Two lived in a hollow tree near camp and fled when the tree was hit with an axe. They were shot while springing away. At night their movements seem rather leisurely, and they were slow about trying to escape.

43. *LEONTOCEBUS GEOFFROYI* (Pucheran).
Geoffroy's Squirrel Monkey.

In all, nine examples were obtained from the Rio Esnápe and Rio Jesusito.

Called "Tití" by Spanish speakers and "Bichichí" by the Indians. Bands of these fine little marmosets were often seen in the lowlands. We saw none and heard of none on Mt. Sapo. They were very common on the lower Sambú, coming into the low bushes and hopping up and down and scolding the party as it drifted downstream in dugouts, homeward bound. Their flesh is very delicate.

44. *ALOUATTA PALLIATA INCONSONANS* Goldman.
Panama Howling Monkey.

An embryo in alcohol from eastern Panama and a skull from the upper Chagres River.

A good many of these monkeys are killed by the Indians because they are dull and stupid though they are less good to eat than Ateles, the spider monkeys, or Cebus, the white-faced monkeys, both of which were much more rare than the howlers in the country traversed.

45. *ATELES DARIENSIS* Goldman. Darien Black Spider Monkey.

A skull from the upper Rio Bayano.

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